

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph on page 9, beginning at line 9 with the following rewritten paragraph:

Figure 2 is a longitudinal sectional view of a building using the fire control system for an elevator. Here, the evacuation floor is the ground floor F1, and the building further includes floors ~~2F~~ F2 through ~~5F~~ F5 (second to fifth floors).

Please replace the paragraph on page 11, beginning at line 4 with the following rewritten paragraph:

The fire detectors Fde and Fd, a temperature detector TD, a door switch 5, a weighing device 6, and an elevator control ~~circuit 35~~ device 10 are connected to an input circuit 34. Signals of the position, and start and stop of the car 2 are inputted from the elevator control ~~circuit 35~~ device 10.

Please replace the paragraph on page 11, beginning at line 9 with the following rewritten paragraph:

An output ~~circuit 35~~ device 10 is connected to an elevator control ~~circuit 35~~ device 10, a car rescue-operation indicating means CA, a hall rescue-operation indicating means HA provided on each floor, and a fire door FP, which separates the elevator hall Eh.

Please replace the paragraph bridging pages 11 and 12 with the following rewritten paragraph:

Accordingly, when j is 1, the floor FL(j) becomes FL1, and the second floor ~~2F~~ F2 is recorded in that address. Similarly, the enrollment of 300 persons of the second floor ~~2F~~ F2 is

recorded on the enrollment $Mn1$. The number of emergency-staircase-evacuees of the second floor ~~2F~~ F2 of 290 persons is recorded in the number of emergency-staircase-evacuees $Ms1$. The number of elevator-evacuees of the second floor ~~2F~~ F2, i.e., 10 persons, is recorded in the number of elevator-evacuees $Me1$.

Please replace the paragraph on page 12, beginning at line 5 with the following rewritten paragraph:

The floor $FL(j)$ is a memory address in which is recorded the number of the floor; however, in the following explanation, this may also refer to the number of the floor recorded in that address. That is, the floor $FL1$ is the second floor ~~2F~~ F2, when j equals 1. Similarly, the enrollment $Mn(j)$, the number $Ms(j)$ of emergency-staircase-evacuees, and the number $Me(j)$ of elevator-evacuees may refer to the contents recorded in the respective addresses.

Please replace the paragraph bridging pages 12 and 13 with the following rewritten paragraph:

Here, in the case where k is 1, the second floor ~~2F~~ F2 is recorded as the floor $FL1$, 3 m is recorded as the distance $Ds1$ from the evacuation floor $F1$, 1.5 seconds is recorded as the acceleration time Ta , 0.5 seconds as the time $Tm1$ traveling at the rated speed, 1.5 seconds as the acceleration time, 4 seconds as the opening and closing time Toc of the doors, and 9 seconds as the boarding time Tgo assuming that 11 persons are boarding. Accordingly, the rescue response time Trs totals 19.5 seconds. The same applies to the rest of the floors.

Please replace the paragraph on page 14, beginning at line 1 with the following rewritten paragraph:

The same applies to the rest; the fire detector Fd22 recorded in the memory address Fd22 when m is 22 shows by the entry in the memory address FL22 that the fire detector Fd22 is provided on the fourth floor ~~4F~~ F4, and that the state of activation thereof is recorded as “ON” in the memory address FN22 and that the fire detector Fd22 is activated. The same applies to the case where m is 23, and shows that the fire detector Fd23 is activated.

Please replace the paragraph on page 16, beginning at line 7 with the following rewritten paragraph:

In step S11, a check is made on whether the fire detector Fde1 of the machineroom F7 is activated. If the fire detector Fde1 is activated, the memory address (hereinafter referred to as ‘activation state’) FNe1 indicating the activation state of the fire detector activation table 33c is set to “ON” in step S12. In step S13, a command is given to the elevator control ~~circuit 35~~ device 10 to return the car 2 to the evacuation floor F1. After the car 2 returns to the evacuation floor F1 and opens its doors and closes them again and becomes in standby in step S14, the operation mode DM is set to out of operation in step S15. In step S16, a notice of “out of service” is indicated by the car rescue-operation indicating means CA and the hall rescue-operation indicating means HA, and the process is completed. Accordingly, in this case, rescue operation is not carried out.

Please replace the paragraph bridging pages 16 and 17 with the following rewritten paragraph:

In step S21, g is set to 3, and in step S22, activation of the fire detector Fde3 of the second floor F2 is checked. If the fire detector Fde3 is activated, the activation state FNe3 of the

fire detector activation table 33c is set to “ON” in step S23. In step S24, a command to close is given to the fire doors FP1 of the elevator hall Eh2 of the second floor F2. In the case where the operation mode DM is not yet switched to the rescue operation command in step S25, the operation mode DM is set to the rescue operation command at step S26, and a command is given to the elevator control ~~circuit 35~~device 10 at step S27 to return the car 2 to the evacuation floor F1. In step S28, a notice of “in rescue operation” is indicated by the rescue-operation indicating means CA and HA. In the case where the operation mode DM is already switched to the rescue operation command in step S25, the process moves on to step S28 and the aforementioned notice is indicated, and moves further on to step S30.

Please replace the paragraph bridging pages 17 and 18 with the following rewritten paragraph:

At step S41, m is set to 1. Here, the variable m shows that it is related to the fire detector activation table 33d shown in Figure 9. In step S42 and step S43, a check is made on whether or not the fire detector Fd1 is activated. If the fire detector Fd1 is activated, the activation state FN1 of the fire detector activation table 33d is set to “ON” in step S44. In the case where the operation mode DM is not yet switched to the rescue operation command in step S45, the operation mode DM is set to the rescue operation command in step S46, and a command is given to the elevator control ~~circuit 35~~device 10 in step S47 to return the car 2 to the evacuation floor F1. In step S48, a notice of “in rescue operation” is indicated by the rescue-operation indicating means CA and HA. In the case where the operation mode DM is already switched to the rescue operation command in step S45, the process moves on to step S48 and the aforementioned notice is indicated, and moves further on to step S50.

Please replace the paragraph bridging pages 18 and 19 with the following rewritten paragraph:

In the case where the operation mode DM is the rescue operation command, i is set to 1 in step S62. Here, since the variable i is related to the evacuation-time table 33e shown in Figure 11, the floor FL1 is the second floor ~~2F~~ F2. In step S63, the current room temperature TE_p of the floor FL1, i.e., the second floor ~~2F~~ F2, is read from the temperature detector TD1, and is recorded in the current room temperature TE_{p1} of the evacuation-time table 33e. In step S64, the evacuation time Te according to the room temperature TE_p is calculated based on Figure 10, and is recorded in the evacuation time Te1 in the evacuation-time table 33e. The same process is repeated via step S65 and step S66 until the process for the last variable i is finished and the evacuation-time table 33e is completed; then the process moves on to step S67.

Please replace the paragraph bridging pages 19 and 20 with the following rewritten paragraph:

In step S81, a check is made on whether all the cars 2 are back on the evacuation floor F1 and are in standby with doors closed. In the case where the cars 2 are not in standby with doors closed, the process moves on to the process shown in Figure 19. In the case where the cars 2 are in standby with doors closed, in step S82, the number of cars that are ready for rescue operation is detected by the elevator control ~~circuit-device~~ 10 and written in the number Nav of cars. In step S83, the variable p is set to 1. In step S84, the evacuation time Te1, i.e. 10 minutes, is read from the rescue-operation table 33f. In step S85, the rescue-response time Trs(k) for the floor FL1 is read out. That is, since the variable p is related to the rescue-operation order table 33f shown in Figure 12, the floor FL1 becomes the fourth floor ~~4F~~ F4. Accordingly, the rescue-

response time $Trs(k)$ becomes 29.5 seconds, which is the rescue-response time $Trs(4)$ for the fourth floor ~~4F~~ F4 in Figure 7. In step S86, the evacuation time Tel , i.e., 10 minutes, and the rescue-response time $Trs(4)$, i.e., 29.5 seconds, are compared. Since the evacuation time Tel , i.e., 10 minutes, is longer, the process moves on to step S89, and the number $Mrs(h)$ of remainders is read out. Since the floor $FL1$ is the fourth floor ~~4F~~ F4 also here, in Figure 13, the number $Mrs4$ of remainders becomes 260. Accordingly, the process moves from step S90 to step S91, and the number $Ncar$ of cars required for rescuing the remainders $Mrs4$ of 260 persons is calculated. That is,

$$\begin{aligned} & \text{number } Ncar \text{ of cars required} \\ &= (\text{number } Mrs4 \text{ of remainders}=260)/(\text{capacity } Cap \text{ of car}=11) \\ &= 23.6 \text{ cars,} \end{aligned}$$

where the capacity Cap of the car 2 is 11. Raising the number to the nearest whole number makes 24 cars. Since the number $Ncar$ of cars required is not less than the number Nav of all the operational cars, i.e., four, the process moves on to step S93 where a rescue-operation command to move to the floor $FL1$ =the fourth floor ~~4F~~ F4 is given to all the operational cars 2, and then moves on to the program of Figure 19. The elevator operation circuit drives the cars 2 to the fourth floor ~~4F~~ F4 according to the above-described rescue-operation command.

Please replace the paragraph on page 21, beginning at line 13 with the following rewritten paragraph:

In step S101, the variable h is set to 1. In step S102, the variable nc indicating the car number of the car 2 is set to 1. In step S103, a check is made on whether or not car No. 1 is

stopped at the floor FL(h), i.e., floor FL1. Since the variable h is related to the remainder-number table 33g shown in Figure 13, the floor FL1 becomes the second floor ~~2F~~ F2.

Please replace the paragraph bridging pages 21 and 22 with the following rewritten paragraph:

Step S103 and step S104 are processes for detecting the timing for weighing the live load W_c of the car 2 by means of a weighing device 6. That is, in step S103 a check is made on whether or not the car 2 is stopped at the second floor ~~2F~~ F2, and in step S104 a check is made on whether or not the car 2 is in a state immediately before closing of the doors 3 and before activation towards the evacuation floor F1. In the case where the two above-mentioned conditions are not satisfied, the process moves on to step S107. In the case where both of the two above-mentioned conditions are satisfied, the output from the weighing device 6 is read out and the live load W_c is calculated in step S105. The number M_{en} of passengers is calculated by dividing the live load W_c by the weight per person, i.e., 65 kilograms. In step S106, the formula [number M_{rs1} of remainders – number M_{en} of passengers]

is calculated, and the result thereof is written as a new number M_{rs1} of remainders. By this writing, the number M_{rs1} of remainders is amended. In step S107 and step S108, the same processes are carried out for the next car. After the processes for the final car are completed, the same processes are carried out in step S109 and S110 where h is 2, i.e., for the floor FL2, which is the third floor F3. The process is completed when the processes for the final floor is completed in step S109.

Please replace the paragraph on page 25, beginning at line 14 with the following rewritten paragraph:

In step S121, the variable nc which indicates the car number of the car 2 is set to 1. In step S123, a check is made on whether or not the car 2 No. 1 is stopped at the floor $FL(h)$, i.e., the floor $FL1$. Since the variable h is related to the remainder-number table 33i shown in Figure 21, the floor $FL1$ becomes the second floor ~~2F~~ F2. If car 2 No. 1 is not stopped at the floor $FL1$, a check is made in step S123, step S124 and step S125 on whether or not car No. 1 is stopped at each of the other floors $FL(h)$. If car 2 No. 1 is not stopped at any of the floors $FL(h)$, the same check is made for the car of the next car number in the increasing order of car number in step S136 and step S137.

Please replace the paragraph bridging pages 25 and 26 with the following rewritten paragraph:

Step S123 to step S129 are processes for calculating the number $Mr(h)$ of arrived persons $Mr(h)$. In step S123, if car 2 No. 1 is stopped at the floor $FL1$, i.e., the second floor ~~2F~~ F2, the process moves on to step S126, and a check is made whether or not the car 2 is immediately before opening of the car doors 3 after arrival. That is, step S126 is a process for detecting the timing for weighing the live load Wc of the car 2 by means of a weighing device 6. If the car 2 is immediately before opening doors, the process moves on to step S127, and the live load Wc is calculated by reading the output from the weighing device 6. The number Men of passengers is calculated by dividing the live load Wc by the weight per passenger 8, i.e., 65 kilograms. In step S128, the aforementioned number Men of passengers is added to the number $Mr1$ of arrived

persons at that point of time. In step S129, the obtained value is recorded as the new number Mr1 of arrived persons. The same processes are carried out for the rest of the floors FL(h).

Please replace the paragraph on page 26, beginning at line 8, with the following rewritten paragraph:

Step S130 to step S135 are processes for calculating the number Ms(h) of departed persons. In step S123, a check is made on whether or not car 2 No. 1 is stopped at the floor FL1, i.e., the second floor ~~2F~~ F2, and in step S130, a check is made on whether or not the car 2 is immediately before activation with the car doors 3 closed. That is, the step S130 is a process for detecting the timing for weighing the live load Wc of the car 2 by means of a weighing device 6. If the car 2 is immediately before activation, the process moves on to step S131, and the live load Wc is calculated by reading the output from the weighing device 6. The number Men of passengers is calculated by dividing the live load Wc by the weight per passenger 8, i.e., 65 kilograms. In step S132, the aforementioned number Men of passengers is added to the number Ms1 of departed persons up to that point of time, and a new number Ms1 of departed persons is obtained. In step S133, the number Ms1 of departed persons is subtracted from the number Mr1 of arrived persons who have arrived at the floor FL1, i.e., the second floor ~~2F~~ F2, until then, and the difference $\Delta m (= Mr1 - Ms1)$ is obtained. In step S134, the value obtained by multiplying the difference Δm by the elevator-evacuation ratio $\alpha 1$, i.e., 1/30 of the floor FL1, i.e., the second floor F2 is added to the number Mrs1 of remainders until that time, and a new number Mrs1 of remainders is obtained. In step S135, the amended new number Ms1 of departed persons and new number Mrs1 of remainders are recorded in the remainder-number table 33i.